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REMARKS

2       The Applicants respectfully request reconsideration and allowance of claims 1 through  
3       16, and consideration and allowance of new claim 18 in view of the above amendments and the  
4       following arguments.

5

6       THE AMENDMENTS TO THE CLAIMS

7       The Amendments to Claims 17 and 18

8       Based on the Examiner's suggestions at section 3 of the Office Action mailed June 18,  
9       2004, it appears that the proposed corrections submitted with the response filed May 14, 2004,  
10      were deemed to be in improper form and thus not considered or entered in the case. The above  
11      claim listing follows the Examiner's suggestions in order to correct the claim misnumbering  
12      error in the original application. It is noted that since claim 18 is labeled a "new" claim in  
13      accordance with the Examiner's suggestions, the amendment markings required in 37 C.F.R.  
14      1.121 are not used in the claim to show that the final element in claim 18 has been redesignated  
15      "(c)" rather than "(b)."

16

17       The Other Amendments

18       Claim 1 is amended above to more clearly define the nature of the invention. The above  
19      claim listing also corrects typographical errors at element (a) of claim 4, element (b) of claim 6,  
20      element (a) of claim 7, element (a) of claim 10, element (b) of claim 11, and element (b) of claim  
21      12. Claim 6, element (a) is amended to provide consistency between the terms used in the  
22      claims. Antecedent basis errors are corrected in first line of claims 10, 11, and 12. Claim 13 is

1 amended in the final element to clarify that it is each respective decoding arrangement that  
2 performs the recited function. In several claims, the transitional phrase "including" or "includes"  
3 is replaced with "comprising" and "comprises."

4

5 AMENDMENTS TO THE SPECIFICATION

6 The amendments to the specification are made to correct typographical errors.

7

8 CLAIM OBJECTIONS

9 The Applicants respectfully traverse the objections to claims 1, 5, and 13 set forth in the  
10 current Office Action.

11 As to claim 1, the Applicants note that the word "additional" has been removed from the  
12 claim with respect to the term "signals." In any case, deleting the word "the" before "signals" in  
13 line 9 of claim 1 is unnecessary because the term "signals" is first used in line 3 of claim 1.  
14 Thus, it is appropriate to use the definite article "the" in connection with the "signals" referenced  
15 at line 9 of claim 1.

16 As to claim 5, the Applicants respectfully decline to add the term "input" before "as" in  
17 line 2 of the claim because to do so would make the claim language inconsistent with the usage  
18 throughout the other claims and the specification. In particular, the term "input" is used  
19 consistently throughout the disclosure and other claims to refer to the reference voltages applied  
20 to the reference voltage multiplexers such as MUX 202 and MUX 205. To refer to the control  
21 signal for one of the multiplexers as an "input" as suggested in the Office Action could be  
22 confusing.

1       As to claim 13, the Office Action suggested replacing the word “the” with “said” before  
2       “decoding” in line 16 of claim 13. Because replacing the definite article “the” with the alternate  
3       definite article “said” should have no impact on the claim, the Applicants respectfully decline to  
4       make the change. However, the final element of claim 13 is amended above to add the word  
5       “respective” to clarify that it is each “respective decoding arrangement” that performs the recited  
6       function set out in that element.

7       For all of these reasons the Applicants respectfully decline to make the changes suggested  
8       at paragraph 2 of the Office Action, and submit that the claim objections set out in that paragraph  
9       should be withdrawn.

10

11       CLAIMS 5, 6, 11, 12, 15, AND 16 ARE NOT OBJECTIONABLE UNDER 35 U.S.C. §112,  
12       SECOND PARAGRAPH

13  
14       The current Office Action rejected claims 5, 6, 11, 12, 15, and 16 under 35 U.S.C. §112,  
15       second paragraph, based upon the usage of ordinals in these claims. The Applicants traverse  
16       these rejections.

17       Ordinals such as “second” and “third” are used in these claims merely to distinguish  
18       between respective elements of the same type and do not imply any particular order or  
19       precedence. Thus, there is no requirement that a “first” element of a given type be referenced in  
20       a claim before a “second” element of that type is referenced. Perhaps more importantly, the  
21       ordinals used in the claims correspond to the ordinals used to name elements in the disclosure.  
22       For example, claim 5 is directed to the second signal (signal B) decoding arrangement shown at  
23       dashed box 201 in Figure 2 and dashed box 403 in Figure 4. Element (a) of claim 5 refers to a

1 second differential receiver and a reference voltage multiplexer having second and third  
2 reference voltage inputs. The second and third reference voltage inputs correspond to V2 and V3  
3 in Figures 2 and 4. In the second signal decoding arrangement shown in the dashed box 201 in  
4 Figure 2, the "second differential receiver" comprises the differential receiver 203 as described in  
5 the paragraph beginning at page 8, line 22 of the disclosure. In the second signal decoding  
6 arrangement shown in dashed box 403 in Figure 4, the "second differential receiver" comprises  
7 the differential receiver 405 as described in the paragraph beginning at page 9, line 25 of the  
8 disclosure.

9 Because the ordinals used in the claims precisely correspond to the ordinals used in the  
10 disclosure and because the ordinals are in any event not intended to imply any order or  
11 precedence between elements of the same type, the Applicants respectfully submit that claims 5,  
12 6, 11, 12, 15, and 16 are not objectionable under 35 U.S.C. §112, second paragraph, and request  
13 that the Section 112 rejections be withdrawn.

14

15 **CLAIMS 1 THROUGH 16 AND 18 THROUGH 20 ARE NOT OBVIOUS OVER THE '246**  
**PATENT IN VIEW OF THE BLOOD REFERENCE**

16 Claims 1 through 17 were rejected under 35 U.S.C. 103(a) as being unpatentable over  
17 U.S. Patent No. 5,761,246 to Cao et al. (the "246 patent") in view of U.S. Patent No. 3,993,867  
18 to Blood (the "Blood patent" or "Blood"). The Applicants submit that claims 1 through 16 and  
19 18 are not obvious in view of the proposed combination of references because the 246 patent and  
20 the Blood patent do not teach or suggest each and every element required by the Applicants'  
21 claims.  
22

1       Independent Claim 1

2           Claim 1 requires “an electronic circuit adapted to send a signal to two or more separate  
3       electronic circuits over a common transmission line while simultaneously receiving signals from  
4       the two or more separate circuits over the common transmission line.” Element (a) of claim 1  
5       requires that the electronic circuit includes sending circuitry that creates a combined signal which  
6       is “dependent on the signal from the electronic circuit and the signals simultaneously applied by  
7       the two or more separate electronic circuits connected at other points to the common  
8       transmission line.” Element (b) of claim 1 requires that the electronic circuit includes decoding  
9       circuitry for “decoding the signals from the two or more separate electronic circuits responsive to  
10      the combined signal.” This claim language clearly requires a circuit that is capable of producing  
11      a signal that cooperates with signals from two or more additional circuits (a total of at least three  
12      signals, one being sent and two or more being received) to simultaneously create a combined  
13      signal on a common transmission line. The required circuit must also decode the two or more  
14      additional signals from the combined signal in order to receive those two or more additional  
15      signals asserted from the two or more additional circuits.

16           The 246 patent discloses a single sending circuit that encodes a number of digital signals  
17      into a single combined signal. The combined signal is sent over a transmission line to a second  
18      integrated circuit where the second circuit decodes the combined signal into the original distinct  
19      signals. The second electronic circuit includes an arrangement of multiplexers and differential  
20      receivers that utilize specified reference voltages and decoded signals in order to decode the other  
21      signals comprising the combined signal.

1       The 246 patent does not disclose combining signals from at least three circuits into a  
2 single signal on a common transmission line as required by element (a) of claim 1. In addition,  
3 the 246 patent does not disclose that the circuit having the sending circuitry also decodes the  
4 separate signals from two or more separate circuits on the common transmission line as required  
5 by element (b) of claim 1. In contrast, the 246 patent discloses a sending circuit at one point on a  
6 transmission line and a receiving circuit at another point on a transmission line.

7       The Blood patent does not make up for the deficiencies in the 246 patent with respect to  
8 Applicants' claims. Blood discloses a number of communication stations located on a common  
9 transmission line where each station includes sending and receiving circuitry. Blood discloses at  
10 Col. 7, lines 2-4 that simultaneous communication may take place between two, and only two, of  
11 the communication stations. References in the sentences beginning at Col. 7, line 13 and line 25  
12 confirm that the circuit disclosed in the Blood patent is capable of simultaneously sending a  
13 signal to and receiving a signal from only one separate circuit. Like the 246 patent, Blood does  
14 not disclose a circuit that can send a signal and also receive a signal from two or more separate  
15 circuits as required by elements (a) and (b) of claim 1. Because neither the 246 patent nor the  
16 Blood patent teach or suggest either element of claim 1, the combination of these references  
17 cannot teach or suggest these elements.

18       Assuming for the sake of argument that it would have been obvious to combine the  
19 teachings of the 246 patent and the Blood patent, there is no suggestion in the prior art to  
20 combine these references in a way that would result in the circuit required by Applicants' claim  
21 1. The Office Action seems to suggest that since the Blood patent discloses a circuit having both  
22 sending and receiving circuits, it would have been obvious to combine the sending and receiving

1       circuits taught by the 246 patent into a single sending and receiving circuit. However, simply  
2       combining the sending and receiving circuitry taught by the 246 patent into a single circuit,  
3       assuming it is possible at all, does not result in the circuit required by claim 1. Rather, the  
4       resulting combined sending and receiving circuits from the 246 patent would simply be able to  
5       send multiple signals from one circuit to another. There would be no provision in such a  
6       combined circuit to send one signal across a common transmission line to cooperate in producing  
7       a combined signal.

8              The current Office Action at the bottom of page 5 cites the case of *Nerwin v. Erlichman*,  
9       168 USPQ 177 as support for the proposition that “constructing a formerly integral structure in  
10       various elements involves only routine skill in the art.” However, in view of the above  
11       arguments, it is inappropriate to apply the concept of constructing a formerly integral structure in  
12       various elements with respect to the rejection of claim 1.

13              For all of these reasons, the Applicants submit that independent claim 1 is not obvious  
14       over the 246 patent in view of the Blood patent and is entitled to allowance along with its  
15       respective dependent claims, claims 2 through 6.

16       Independent Claim 7

17              Applicants’ claim 7 requires “three or more circuits connected together by a common  
18       transmission line, each circuit adapted to assert a respective digital signal.” As set out at element  
19       (b), each circuit includes sending circuitry that cooperates with the sending circuitry of the other  
20       circuits (at least two other circuits since there is a total of three or more) to produce an encoded  
21       signal on a common transmission line. Element (c) of claim 7 requires that each of the three or

1 more circuits includes a decoding arrangement for decoding the encoded signal to produce the  
2 signals asserted from each other circuit, that is, at least two other circuits.

3 As discussed above with respect to claim 1, the 246 patent does not disclose three or  
4 more circuits connected together by a common transmission line and adapted to each assert a  
5 respective digital signal as required by element (a) of claim 7. The 246 patent also does not teach  
6 or suggest that each circuit also includes a decoding arrangement for decoding the encoded signal  
7 on the common transmission line to produce the signals asserted by the other (at least two)  
8 circuits as required by element (c) of claim 7. Also as discussed above with respect to claim 1,  
9 the Blood patent does not make up for the deficiencies in the 246 patent.

10 Because the combination of the 246 patent and the Blood patent does not teach or suggest  
11 all of the elements required in claim 7, claim 7 is not obvious over the 246 patent in view of the  
12 Blood patent and is entitled to allowance together with its respective dependent claims, claims 8  
13 through 12.

14 Independent Claim 13

15 Claim 13 is directed to an electronic system with three circuits. Each circuit includes a  
16 respective encoding element which cooperates with the encoding elements of the other circuits to  
17 produce an encoded signal on a common transmission network. Each circuit further includes a  
18 respective decoding arrangement for decoding the encoded signal to produce the signal from each  
19 other circuit in the system. As discussed above particularly with reference to Claim 1, neither the  
20 246 patent nor the Blood patent teach or suggest a circuit having a sending component that  
21 cooperates with two or more other sending components to produce a combined/encoded signal on  
22 a transmission line. Thus, neither reference teaches or suggests the structure required at element

1 (a) of claim 13. Also, neither the 246 patent nor the Blood patent teach or suggest any circuit  
2 having a decoding arrangement for decoding the encoded signal to produce the signals asserted  
3 by the two or more other circuits. Thus, neither reference teaches or suggests the structure  
4 required at element (b) of claim 13.

5 Because the 246 patent and Blood patent do not teach or suggest all of the elements  
6 required by claim 13, claim 13 is not obvious in view of the two references and is entitled to  
7 allowance together with its respective dependent claims, claims 14 through 16 and 18.  
8

9 **REJECTION OF CLAIMS 1 THROUGH 3, 5 THROUGH 7, AND 10 THROUGH 12 UNDER**  
10 **NONSTATUTORY OBVIOUSNESS-TYPE DOUBLE PATENTING**

11  
12 In response to the rejection of claims 1 through 3, 5 through 7, and 10 through 12 under  
13 the judicially created doctrine of obviousness-type double patenting, the Applicants submit a  
14 Terminal Disclaimer in compliance with 37 C.F.R. § 1.321(c) along with this response. The  
15 Applicants submit that the terminal disclaimer obviates the nonstatutory double patenting  
16 rejection of claims 1 through 3, 5 through 7, and 10 through 12.

## **1      CONCLUSION**

2 For all of the above reasons, the Applicants respectfully request reconsideration and  
3 allowance of claims 1 through 16 and consideration and allowance of new claim 18. If the  
4 Examiner should feel that any issue remains as to the allowability of these claims, or that a  
5 conference might expedite allowance of the claims, he is asked to telephone the Applicants'  
6 attorney, Russell D. Culbertson, at the number listed below.

Respectfully submitted,

The Culbertson Group, P.C.

Dated: June 30, 2005

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I hereby certify that this correspondence is being facsimile transmitted to the United States Patent and Trademark Office, (Fax No. 703-872-9306) on June 30 2005.

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